

NOTES ON AUSTRALIAN DIPTERA. XXVII.

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(Communicated by Dr. G. A. Waterhouse.)

(Two Text-figures.)

[Read 25th March, 1931.]

Family CHLOROPIDAE.

Subfamily OSCINOSOMINAE.

Genus EPHYDROSCINIS Malloch.

EPHYDROSCINIS RAYMENTI Curran.

Amer. Mus. Novit., No. 422, p. 1, 10th June, 1930.

This species was described from one specimen apparently, and recorded as having been taken entering the burrows of *Halictus raymenti* Cockerell on high ground near the sea at Sandringham, Victoria, by Messrs. Rayment and Cockerell.

If the species is correctly placed as to genus, it will be readily distinguished from *australis* Malloch, the genotype and only previously described species, by the large fuscous mark on each wing, *australis* having the wings hyaline. Should it prove to belong to the genus *Parahippelates* Becker, which is distinguished from *Ephydroschinis* in the female sex merely by the presence of a variably developed curved bristle at the apex of the hind tibia on its under posterior surface, then it is very closely similar to *ornatipennis* Malloch, which has the wings marked in much the same way, but the legs in the latter are yellow at apices of femora, bases and apices of hind tibiae and all of fore and mid pair, and the three basal segments of the tarsi are also yellow, while in *raymenti* the legs are black, with the tarsi brown.

Nothing definite has been placed upon record regarding the habits of the species of the genus *Parahippelates*, but the late Dr. E. W. Ferguson stated in a letter to me some years ago that some of the species occurred on the seashore, one or more of them being remarkable for the conspicuous appearance of the specimens when they face the collector owing to the silvery face shining in the sun, and the abrupt disappearance which takes place when they turn round.

I have not seen Curran's type which is deposited in the American Museum of Natural History in New York City, N.Y.

Genus OSCINOSOMA Lioy.

This is the same generic concept as *Botanobia* Lioy of my previous papers in this series, the change being due to an interpretation of the genotypes. Later I hope to return to this matter in a revision of the Australian species; meanwhile I simply present descriptions of several species of the genus from Tasmania, which have been in my hands for some years.

OSCINOSOMA NIGROANNULATA, n. sp.

♂. Head black, frons rufous-yellow in front, with white pruinescence except on the triangle when seen from in front, face brownish, cheeks with silvery-white dust above, lower margins glossy-black, antennae, aristae, and mouth parts black. Thorax glossy-black, lateral margins of mesonotum faintly grey-dusted. Abdomen shining black. Legs yellow, coxae except apices, femora except their extreme bases and apices, and a subbasal and subapical band on each tibia, black. Wings clear. Halteres yellow, knobs whitish.

Eyes sparsely haired; frons about half the head-width, triangle broad, extending to beyond the middle of frons, postvertical and ocellar pairs of bristles of moderate size, erect and cruciate, vertical bristles and three on each orbit distinct, interfrontalia with very few hairs, two in middle of anterior margin quite distinct; parafacial not visible from the side; cheek very narrow in front, higher behind, vibrissal hair weak; antennae of moderate size, third segment orbicular; arista slender, microscopically pubescent. Mesonotum with fine short dark hairs, not punctate; scutellum with two long apical and two short subapical bristles. Legs normal, tarsi slender. Second costal division longer than first, and fully one and a half times as long as third, fourth nearly as long as third. Length, 1·75 mm.

Type: Strahan, Tasmania, 6th February, 1923 (A. Tonnoir). Type to be returned to collector.

The next three species described herein belong to a group in which the scutellum is largely or partly yellow, and the mesonotum is glossy-black except on its lateral margins. There are some other species of the group in this region but in the meantime I present a synopsis of the characters of the three now dealt with.

Synopsis of the Species.

1. Palpi, all coxae, anterior surface of fore femur on its entire extent and its posterior surface to a lesser extent, and nearly all of the third antennal segment, black; scutellum pale-yellow, only its extreme lateral basal angles black; prosternum black *tonnoiri*, n. sp.
- Palpi entirely, third antennal segment largely or entirely, yellow; scutellum more extensively blackened; prosternum not entirely black 2
2. All the legs and the posterior lateral angles of the frontal triangle yellow *tasmaniensis*, n. sp.
- Coxae, all femora, and the hind tibiae, largely blackened; frontal triangle entirely black on hind margin *tinctipes*, n. sp.

Of the other species described herein it may be mentioned that *nigroannulata* has the entire thorax including the scutellum glossy-black, distinguishing it from the *tonnoiri* group, and the tibiae of all legs are yellow with two black annuli, which latter character readily distinguishes it from any other Australian species so far described. The violet-black dorsum of thorax, dark halteres, and differently coloured legs will distinguish *nigrovilacea* from the other species in the present paper, and these and other characters which may be gleaned from the description will separate it from other Australian species.

The group of species included in this paper after the description of *nigrovilacea* is one in which the scutellum is largely or entirely yellow, but the mesonotum is distinctly vittate with black or fuscous instead of entirely black except the lateral margins as in the *tonnoiri* group. I present a key to the species of this group that are dealt with herein.

OSCINOSOMA TONNOIRI, n. sp.

♂. Head black, anterior two-thirds of frons, the face, lower part of second antennal segment, and lower basal angle of third, orange-coloured; triangle glossy-black; middle of cheeks yellowish; palpi black. Thorax glossy-black, upper margin of pleura and lateral margins of mesonotum orange-yellow, humeral angles suffused with fuscous on disc; scutellum lemon-yellow, black at extreme lateral basal angles. Abdomen orange-yellow, a spot on each side of first visible tergite, and the greater part of each of the other tergites black. Legs yellow, all coxae and anterior side of anterior femora black. Wings hyaline. Halteres yellow. All hairs and bristles blackish.

Eyes hairy; frons about one-half of the head-width, with numerous hairs, triangle moderately broad, rather obtuse, extending to about middle of frons; face concave, parafacials not visible from the side; third antennal segment large, a little higher than long, somewhat transverse at apex; arista pubescent; cheek narrow. Thorax smooth, with fine decumbent hairs and normal bristling; scutellum convex, with four bristles and fine black discal hairs. Abdomen stout, tapered apically. Legs long and rather stout, fore tarsi slender. Second costal division not twice as long as third; marginal cell at apex of first vein about twice as wide as submarginal at same point; fourth vein slightly arcuate on its apical section, its penultimate section more than twice as long as the penultimate section of third; inner cross-vein very distinctly proximad of apex of first vein. Length, 3 mm.

Type: Burnie, Tasmania, 25th October, 1922 (A. Tonnoir). Type to be returned to collector.

OSCINOSOMA TASMANIENSIS, n. sp.

♂, ♀. Head orange-yellow, occiput above, except its upper margin, frontal triangle except its posterior lateral angles, the aristae, and labrum, black or fuscous. Thorax glossy-black, upper margin of pleura, lateral margins of mesonotum, lower part of propleura, the prosternum, and the apex of scutellum, yellow. Abdomen yellow, a large mark on each side of first visible tergite and a fascia on hind margin of each of the other tergites which extends forward centrally, black. Legs yellow. Wings hyaline. Halteres yellow, their knobs paler. Hairs and bristles black.

Eyes hairy; frons less than one-half of the head-width, triangle large, extending about four-fifths of the distance to anterior margin, surface hairs on frons, and especially some on the posterior portions of the orbits, distinct; antennae normal in size, third segment rounded in front; arista pubescent; cheeks about half as high as width of third antennal segment. Thorax with the disc glossy, but there is a distinct aggregation of setigerous punctures on two lines in front of the dorsocentral bristles; scutellum a little pointed, the subapical pair of bristles much shorter than the apical pair. Abdomen in female more pointed than in male. Venation of wings much as in the preceding species, but the inner cross-vein is below the apex of first vein, and the third costal division and penultimate section of third vein are longer than in that species. Length, 3 mm.

Type male, and allotype, Fern Tree, Tasmania, 1st November, 1922; paratype male, Mt. Wellington, Tasmania, 7th November, 1922 (A. Tonnoir). Type to be returned to the collector.

OSCINOSOMA TINCTIPES, n. sp.

♀. Differs from *tasmaniensis* as follows: The yellow colour does not extend across the upper margin of the occiput, and the prosternum is not entirely yellow. There is less indication of a line of setigerous punctures on each side of mesonotum in line with the dorsocentrals, and the species is smaller. Length, 2 mm.

Type: Eaglehawk Neck, Tasmania, 20th November, 1922 (A. Tonnoir). Type to be returned to the collector.

This and the preceding species are quite similar to *impura* Becker, an Australian species. I have before me a large series of the latter and find that the frontal triangle is always black on its entire hind margin, the mesonotum has no well defined setigerous lines, and the legs are entirely yellow. It is thus an intermediate species between the two Tasmanian forms herein described, possessing as it does characters of both. Another Australian species, as yet undescribed, presents characters similar to *tasmaniensis* in the colour of the frontal triangle and puncturing of the mesonotum, but differs in some other characters.

OSCINOSOMA NIGROVIOLACEA, n. sp.

♀. Frons black, anterior third orange-yellow, triangle highly polished; antennae brown, third segment except its upper margin dull orange-yellow; face clear white, strongly contrasting with other parts of the head, cheeks anteriorly yellow, posteriorly fuscous, mouth parts fuscous, inner margin black; aristae fuscous. Thorax glossy-black, dorsum with a violet or purple tinge; hairs and bristles fuscous. Abdomen black, not as glossy as the mesonotum. Legs fulvous yellow, mid and hind femora, except the narrow bases and apices, black; hind tibiae black on basal halves. Wings hyaline, veins black. Knobs of halteres blackish.

Frontal triangle bare, broad, covering about three-fourths of vertex and extending about two-thirds of the distance to anterior margin; ocellar and postvertical bristles convergent; orbits each with about seven setulae, the frons anteriorly with distinct but sparse black hairs; antennae normal; arista with short pubescence; eyes haired; cheeks narrow. Thorax with erect hairs which are most numerous in line anterior to the dorsocentrals; scutellum with a rather evident angular edge laterally, not evenly rounded off, the disc sparsely haired, margin with three pairs of setulose hairs, apical pair longest. Legs normal. Penultimate section of fourth vein as long as ultimate section of fifth and about twice as long as penultimate section of third; second costal division about one and a half times as long as third. Length, 2 mm.

Type: Sydney, February, 1925; two paratypes, 25th January, 1925. Type to be returned to Australian Museum.

QUADRISTRIATA Group.

This group is distinguished from others in the genus by the general yellow colour of the thorax, and the presence of three or four distinct black or fuscous vittae on the mesonotum. The scutellum is yellow, and the head and legs preponderantly so. I present a key to the species dealt with in this paper, but there are several more species of the group in the Australian region, some of them being now before me.

Key to the Species.

- At most the sternopleura and hypopleura with dark markings; small species averaging about 1 mm. in length; mesonotal vittae not glossy; aristae subnude; width of

- marginal cell of wing at apex of first vein not as great as width of submarginal cell at same point *quadristriata* Becker
- Mesopleura, pteropleura, hypopleura, and sternopleura each with a blackish mark, the one on sternopleura sometimes rather faint; larger species, averaging at least 2 mm. in length; mesonotal vittae always glossy-black; arista distinctly pubescent; width of marginal cell at apex of first vein much greater than that of submarginal at same point 2
2. Third antennal segment entirely orange-yellow *luteicornis*, n. sp.
- Third antennal segment largely dark-brown or blackish 3
3. Bristles and hairs on the scutellum and frons luteous; third antennal segment broadly infuscated *luteohirta*, n. sp.
- Bristles and hairs on scutellum and frons black; third antennal segment narrowly infuscated above *nigrohirta*, n. sp.

OSCINOSOMA QUADRISTRATUM (Becker).

A very small species of a general yellowish-testaceous colour, the ocellar spot and four mesonotal vittae black, the latter sometimes partly brownish and the two in centre partly fused; third antennal segment slightly darkened at base; aristae fuscous; abdomen sometimes slightly browned dorsally; legs yellow; wings clear.

Frontal triangle slightly rounded, extending to beyond middle of frons; vertical bristles short, and, like the scattered frontal hairs, black; proboscis slender, the apical section recurved; cheek about half as high as width of third antennal segment; arista pubescent. Scutellum with four black marginal bristles, the apical pair longest, and a few blackish discal hairs. Abdomen and legs normal. Penultimate section of third vein more than half as long as penultimate section of fourth; marginal cell just beyond apex of first vein narrower than submarginal at same point. Length, 1 mm.

Localities: Como, N.S.W., swept from flowers, December, 1923 (H. Petersen). Burnie and Wilmot, Tasmania, October and January, 1922 (A. Tonnoir).

Originally described from Sydney, N.S.W.

In none of the examples before me are there any dark marks on the pleura.

OSCINOSOMA LUTEICORNIS, n. sp.

♂. Orange-yellow, with black markings as follows: Ocellar spot, a large mark in centre of occiput, four glossy vittae on mesonotum, the centre pair fused, large marks on hypopleura, pteropleura, posterior portion of mesopleura, and centre of sternopleura, the latter sometimes partly brownish, and all or almost all of metanotum. Abdomen more or less irregularly stained with fuscous on dorsum but not distinctly marked. Legs yellow. Aristae fuscous. Hairs on frons mixed black and yellow, most of those on mesonotum yellow, nearly all the femoral and tibial hairs yellow, those on the tarsi fuscous. Wings hyaline.

Eyes quite densely haired; frons dull, a little longer than wide, the triangle pointed, not sharply defined, dull, and extending to beyond middle of frons; third antennal segment orbicular, not twice as high as cheek at middle; arista pubescent. Scutellum rounded, not marginated, with four black marginal bristles and numerous quite long black and some yellow hairs. Legs stronger than usual, but neither the femora nor tarsi noticeably thickened. Penultimate section of third vein not half as long as penultimate section of fourth, ultimate section of latter slightly undulated, ending almost exactly in wing-tip. Length, 2-2.5 mm.

Type: Wilmot, Tasmania, 8th January, 1922; paratypes, Adventure Bay, Tasmania, 28th December and 1st January, 1922; Cradle Valley, Tasmania, 19th January, 1922 (A. Tonnoir).

This species does not run out satisfactorily to any in Becker's key to the Indo-Australian species of *Oscinella*, none of those in section with quadristriate mesonotum being at all close in characters to it. Of the three species that fall in the segregate of the key to which this one runs, *quadristriata* has already been dealt with, *formosa* Becker has the eyes bare, mesopleura unspotted yellow, and the mesonotal vittae reddish behind and blackish only in front, while *lutea* de Meijere has the mesonotum entirely yellow and the dorsocentral bristles whitish instead of black. The wing in *lutea* has a dark apical spot. Neither of these two species is as yet known to occur in Australia, *lutea* being from New Guinea and the other from Formosa.

I have before me a specimen which agrees very well with this species but the thoracic dorsal hairs are fuscous and the abdomen is more blackened above. It is not improbable that it is a distinct species, but meanwhile I leave it aside pending the receipt of additional specimens from the mainland.

Locality.—Sydney, N.S.W., 24th September, 1924 (Health Dept.).

OSCINOSOMA LUTEOHIRTA, n. sp.

♂, ♀. Male much darker than the preceding species, general colour brownish-yellow, the legs also darker, the ventral surfaces of femora brownish and the apical segment of each tarsus of the same colour; third antennal segment almost entirely black. Female paler in colour than the male, the third antennal segment with only the apex blackened, the legs fulvous yellow. In both sexes the dorsal hairs and the vertical and marginal scutellar bristles are yellow. Structurally similar to *luteicornis*, but not as robust. Length, 2-2.5 mm.

Type male, Eaglehawk, Tasmania, 14th November, 1922; allotype, same locality, 21st November, 1922 (A. Tonnoir). Type to be returned to collector.

It is possible but hardly probable that this is a variety of *luteicornis*.

OSCINOSOMA NIGROHIRTA, n. sp.

♂. Another very similar species, differing essentially from the preceding one only in having the frontal and scutellar hairs and bristles entirely black, and the legs uniformly testaceous yellow. The central contiguous mesonotal vittae are brownish in both the specimens before me, but this is probably not a constant character in the species. The third antennal segment has a narrow blackish upper margin, and the aristae are black. Structurally similar to *luteicornis*. Length, 2.5 mm.

Type; Geeveston, Tasmania, 8th December, 1922; paratype, Sassafras, Victoria, 21st October, 1922 (A. Tonnoir). Type to be returned to the collector. Field investigation may disclose the fact that this is merely a variety of the preceding species.

A female which agrees very well with the two males described above has the anterior half of the central contiguous vittae reddish and the extreme anterior portion blackened, in this respect rather markedly resembling the species of another group in which there is a very marked red or fulvous patch on either the central pair or on both these and the sublateral vittae at the suture. In this latter group the distinction in colour is much more marked and quite abrupt while, where there is a change in colour of the vittae in the preceding group, it is gradual and not sharply defined. The female mentioned here has the dorsum of the abdomen almost entirely black.

Locality.—Sydney, N.S.W., 24th August, 1924 (Health Dept.).



It may be noted here that there are still many species in my hands which are undescribed, my present estimate of the number in the genus which are available being about 45, which may be increased or decreased upon more intensive study than I have yet been able to give to the material.

OSCINOSOMA SIMILIS (Becker).

Apparently a common and rather variable species which may be distinguished from its nearest relatives by the following characters: Frons yellow in front and black above, the large triangle glossy-black except at its extreme anterior angle, the face pure dull-white; antennae fulvous-yellow, rarely slightly darkened on upper margin of third segment; aristae fuscous; cheeks linear, yellow, with a dark line on lower margin; palpi yellow; thorax including the pleura and scutellum glossy-black, without dusting, sometimes brownish-yellow on each side behind the mesonotal suture, the hairs yellowish, the bristles black; abdomen usually black above, not as glossy as the thorax. Legs honey-yellow, with or without blackish markings as noted under the varieties below.

OSCINOSOMA SIMILIS VERA.

In this form the legs are honey-yellow, with a dark streak or broad ring on the mid and hind femora apically.

Locality.—Sydney, N.S.W., various dates from August to January except December (Health Dept. collection).

OSCINOSOMA SIMILIS APICTA, n. var.

This variety differs from the typical one in lacking the dark markings on the mid and hind femora.

Type female, allotype, and one male paratype, Sydney, N.S.W. (Health Dept.).

OSCINOSOMA SIMILIS FUSCIBASIS, n. var.

This variety differs from the typical one and *apicta* in having the bases of the hind tibiae distinctly infuscated. The mid and hind femora are distinctly infuscated as in typical *similis*. The specimens range larger than in either of the other forms, being usually at least 2 mm. in length.

Type female, and five paratype females, Sydney, N.S.W., on various dates from September to January (Health Dept.).

Genus DELTASTOMA Malloch.

DELTASTOMA ATRICORNIS, n. sp.

♀. Head testaceous-yellow, dull except on the black frontal triangle which is almost glossy; antennae yellow, third segment and aristae black; palpi yellow with the apices darkened; proboscis shining black; frontal hairs dark, the others pale. Thorax a little darker than head, with yellowish dust, the mesonotum with four dark vittae which are slightly shining but are partly obscured by the dusting; mesopleura shining reddish-brown below, pteropleura, hypopleura and sternopleura each with a black spot; scutellum yellow; all hairs and bristles dark. Abdomen dark-brown, shining, with brownish dust, genital segments yellow. Legs yellow. Wings hyaline, with a fuscous costal spot extending from apex of second to apex of third vein (Fig. 1). Halteres yellow.

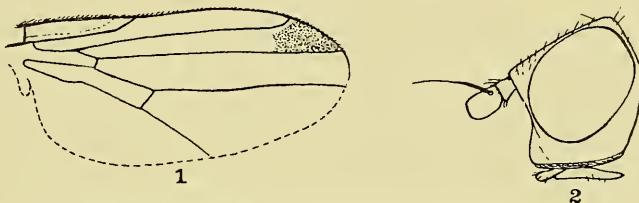
Structurally quite similar to the genotype, *unipuncta* Malloch, differing in having the frons a little wider, with a larger triangle, which extends to a little

short of middle of frons, the scutellum more convex, with six well differentiated marginal bristles, the apical pair longest, and the discal hairs much weaker, the wing a little longer, with the marginal and submarginal cells equally wide from apex of first vein to near apex of second, the latter more broadly curved to meet the costa, and no appreciable dip in the apex of third vein below the dark spot. Length, 2·5 mm.

Type: Wahroonga, Sydney, N.S.W., 24th October, 1926 (Health Dept.).

This species is readily distinguished from *unipuncta* by its coloration, the genotype having a much smaller ocellar black spot, the antennae yellow, thorax entirely yellow, as well as the palpi and proboscis.

Both types will be returned to Australia upon the completion of my work on the family.



Text-fig. 1.—Wing of *Deltastoma atricornis*, n. sp.

Text-fig. 2.—Head of *Assuania granulosa*, n. sp., from the side.

Genus SCOLIOPHTHALMUS Becker.

This genus is not included in my key to the genera of this subfamily published in a previous paper in this series, because I have no Australian examples of the only species recorded by Becker, nor in fact any representative of the genus. For reference to the Australian species see subjoined catalogue of the subfamily.

SCOLIOPHTHALMUS ALBIPILUS Becker.

This species has the thorax yellow, the mesonotum and scutellum with the exception of the humeri and a small spot behind these greyish-brown-dusted, and with sparse short white hairs, the scutellum with two pale apical bristles; pleura with distinct black spots on the mesopleura and sternopleura. The head is yellow, with the frons almost twice as wide as one eye, the triangle grey-brown-dusted, and extending only to the middle of frons. Antennae brown, third segment large, trapezoidal and with pointed front angle, the arista bare, angulate, somewhat thickened at base. Abdomen dull grey-brown on dorsum, the tergites with narrow yellow apices. Legs yellow, tarsi with brown apices, hairing white. Wings hyaline, with fine brown veins, third and fourth veins parallel. Length, 1 mm.

Locality.—Queensland. Type in the Hungarian National Museum, Budapest.

Subfamily CHLOROPINAE.

I am unable to present at this time a complete revision of the Australian species of this subfamily and confine my present contribution to descriptions of a few new species, with notes on one or two of the commoner species of the genus *Chlorops* Meigen. I take the opportunity, however, to publish a catalogue of the described species of Australia in the hope that it may prove of value to those

interested in the group. I have in my possession a number of species not dealt with herein and hope to be able subsequently to return to the matter of their description and elucidation.

Genus *CHLOROMERUS* Becker.

This genus was originally distinguished by its describer on the characters of the hind femora and tibiae, the former being much thickened and armed with two series of minute black spines on the apical half of the anteroventral and posteroventral surfaces and the tibiae much bent and fitting closely against the ventral surface of the femora when at rest. Unfortunately these characters are not always as clearly defined as in the genotype, and the species now dealt with was described as a *Chlorops*.

CHLOROMERUS STRIATIFRONS (Becker).

♂. Lemon-yellow, thorax and abdomen glossy. Head entirely yellow except a narrow dark-brown stripe on the frontal triangle which is black over ocelli and extends to anterior margin, the triangle glossy; aristae fuscous; occiput with a subquadrate fuscous mark in centre from vertex to neck. Thorax with five dorsal vittae which are glossy deep-black except on a portion of the middle one which is red from near anterior margin to beyond the suture in one specimen, the humeri each with a small black spot, the mesopleura, sternopleura, pteropleura, and hypopleura each with a deep-black mark; no black mark below prothoracic spiracle; postnotum glossy-black; scutellum yellow. Abdomen with a fuscous fascia on each of the four visible tergites, which is along anterior margin. Legs yellow, with rather faint dark marks on middle of anterior and posterior femora and middle of posterior tibiae. Wings hyaline. Halteres yellow.

Frontal triangle smooth and polished, extending across vertex and to anterior margin; ocellar setulae small, proclinate and divergent; face slightly retreating to mouth margin, and concave in profile; cheek a little narrower than third antennal segment. Mesonotum with but one pair of prescutellar and one postalar bristle; scutellum almost convex on disc, with two rather prominent apical and two much shorter subapical black bristles. Hind femur much as in *gracilis* Malloch, hardly twice as thick as the mid femur, the two series of short black bristles visible only with a very high power lens; hind tibiae bent at bases only, not as strikingly so as in the genotype and the earlier described species. Second costal division very little longer than first or third, the latter two practically equal in length. Length, 2 mm.

Localities.—St. Patrick R., Geeveston and Fern Tree, Tasmania; Forbes, N.S.W.

This species rather weakens the claim to separation of the genus from *Chlorops*, as the hind femur is much more slender than in the genotype of *Chloromerus*, but it is still possible to relegate it to that genus on the basis of the biserial armature of the femora, though in certain species of *Chlorops* now before me there is a tendency to a production of even this feature, the hind femora having a single weak series of spines.

Genus *ASSUANIA* Becker.

This genus is not a remarkably well defined one, the only characteristic feature being the angulate upper apical extremity of the third antennal segment, shown in Figure 2. Becker to a considerable extent made use of colour characters

in his generic segregations, but in dealing with the Australian species he pointed out that the two European species of the genus have the scutellum yellow, the single African species known to him has the scutellum partly dark, and the Australian species have it entirely black. The new species before me agrees in this respect with its Australian congeners. I have not seen the genotype.

For the guidance of Australian students I present below a diagnosis of the native species based upon Becker's descriptions and the species now described.

Key to the Species.

1. Palpi entirely yellow; third antennal segment yellow, infuscated above; cheek almost twice as high as width of third antennal segment; legs rusty-yellow, with brownish tarsi and a brown cloud on femora and tibiae; aristae very slender *nigroscutellata* Becker
Palpi black or fuscous; third antennal segment black or largely so; cheek not noticeably higher than width of third antennal segment; legs more extensively blackened 2
2. Third antennal segment entirely black; legs black, apices of femora and tibiae and bases of latter yellow; aristae exceptionally thick for this genus; pleura entirely dark *grossiseta* Becker
Third antennal segment yellowish below on at least the inner side; legs largely yellow, the femora, hind tibiae except their apices, fore tarsi, and the apical two segments of mid and hind tarsi, black; aristae thickened at bases, tapering off on basal fourth; pleura glossy-black, the upper margin of sternopleura yellow *granulosa*, n. sp.

ASSUANIA GRANULOSA, n. sp.

♂, ♀. Frons brown, anterior margin conspicuously yellow, triangle glossy-black, occiput shining black, face and cheeks yellowish-testaceous, dull, with whitish dust, centre of face slightly darkened below, cheek with a black line on lower margin; antennae black, third segment with the lower half yellowish on inner side and less noticeably yellowish on outer side; aristae fuscous on the thickened basal fourth, paler beyond; palpi fuscous. Thorax black, glossy on pleura and the mesonotal vittae, the latter five in number but the sublateral and submedian vittae fused so that there appear to be but three broad shining vittae on a grey-dusted ground, the central vitta broad in front, becoming linear about midway between the suture and hind margin and continuing thus to the margin; upper margin of sternopleura yellow; scutellum shining-black. Abdomen shining-black, apex of apical tergite narrowly yellowish. Legs yellow, entire femora and fore tarsi, hind tibiae except their apices, and the two apical segments of mid and hind tarsi black. Wings slightly clouded, the veins thick and fuscous. Halteres with the knobs white.

Frons at vertex one-half of the head width, with some fine black surface hairs, the triangle falling short of eyes at vertex by about one-fourth of its width at that point, and extending to anterior margin, the sides straight and the surface polished; all four vertical setulae small, the ocellars very fine and short, directed forward and divergent; profile as Figure 2; cheek hardly higher than width of third antennal segment; aristae pubescent. Thorax with the dorsum granulose, especially on the more shining vittae, the pleura smooth and polished, all bristles very short and fine, the anterior notopleural indistinguishable in all three specimens, the posterior pair distinct; scutellum flattened on disc, apical bristles very short. Second costal division but little longer than first and about one and one-fourth as long as third, penultimate section of fourth vein nearly as long as ultimate section of fifth. Length, 2.5-3.5 mm.

Type, female, and allotype, Cradle Valley, Tasmania, 23rd January, 1923; one female paratype, same locality, 12th January, 1923 (A. Tonnoir).

The wings of the two previously described species are entirely hyaline.

Genus *CHLOROPS* Meigen.

CHLOROPS GROSSA, n. sp.

♀. Head testaceous-yellow, frontal triangle black, shining, with slight brownish-dust centrally, occiput with a large subquadrate brownish mark in centre from vertex to neck, antennae yellow, third segment and aristae broken off in both specimens, palpi yellow, with black apices. Thorax coloured as head, with five black vittae which are but slightly shining because of the presence of grey dust on their entire extent, the median and submedian vittae tapered off behind, the sublaterals present behind suture only, and rudimentary; pleura with five black marks, one below the prothoracic spiracle, the others on the mesopleura, sternopleura, pteropleura, and hypopleura; scutellum broadly browned on disc; postnotum fuscous. Abdomen yellow, with the exposed dorsal area of each tergite except the narrow posterior margin dark brown or fuscous. Legs yellow, femora variably stained with brown or fuscous, tibiae less noticeably darkened, but the hind pair usually with a fuscous annulus beyond middle, several of the apical segments of fore tarsi and the fifth in mid and hind pairs fuscous. Wings slightly smoky, all veins brown. Halteres yellowish-white.

Frons at vertex nearly one-half of the head-width, slightly longer at centre than its width at vertex, triangle narrow, about three-fifths of the vertical width at posterior extremity and continued to anterior margin, with a deep central sulcus and about three more slender deep sulci on each side parallel to the lateral margins, vertical bristles represented by minute fine hairs, the ocellars indistinguishable, the surface hairs as long as the vertical bristles; eyes a little longer than high, almost bare; face retreating below, the frons projecting farther beyond eyes than height of cheek, the latter about one-third as high as eye and higher than width of parafacial; antennae broken; palpi normal. Thorax with scattered black hairs and the usual bristles; scutellum with discal hairs and four apical bristles. Abdomen elongate, with fine black hairs. Legs normal, fore tarsi not widened. Wings elongate, the ultimate section of fourth vein more distinct than usual; its penultimate section a little longer than penultimate section of third and about three-fourths as long as ultimate section of fifth. Length, 6·5 mm.

Type: King River, Tasmania, 4th February, 1923; one paratype, Wilmot, Tasmania, 8th January, 1923 (A. Tonnoir).

CHLOROPS SCUTELLARIS Becker.

The species has the frontal triangle almost entirely smooth, without either central or lateral sulci, and mostly black, the palpi black, and third antennal segment largely infuscated, the aristae fuscous. Thorax with five shining black vittae, and all pleural sclerites distinctly black-spotted, the scutellum black on each side and more or less broadly yellow in centre. Legs yellow, femora almost entirely black, the hind and sometimes also the mid tibiae infuscated centrally.

A rather slender species, with the hind femora hardly thicker than the mid pair and though there is a series of microscopic wart-like elevations on the apical third or more of the posteroventral surface there are practically no such elevations on the anteroventral surface. It is possible that this species may yet

be removed to the genus *Chloromerus* along with *striatifrons* Becker, a course adopted for the latter herein, but in the meantime I leave it in the genus in which it was described. There are several other species of a similar doubtful status now before me. Length, 2·5-3 mm.

Originally described from New South Wales, and represented in the material before me from Como, N.S.W., December, 1928 (H. Petersen); National Park, 15th December, 1922, Burnie, 31st January, 1923, and Geeveston, 7th December, 1922, all in Tasmania (A. Tonnoir).

CHLOROPS CANALICULATA Becker.

I accept as this species a specimen which agrees so closely with Becker's description that I consider there can be no reasonable doubt as to the correctness of the identification though the type series of the species came from Formosa.

The species belongs to that group in which the frontal triangle is finely longitudinally furrowed or striate on its entire extent, there being in this case two or three such deep complete furrows on each side and no central anterior shallower sulcus. An additional distinguishing character is found in the colour of the aristae which are yellowish-white, an uncommon character in the genus which is duplicated in at least two other species now before me. The palpi are yellow, the frons yellow with a slightly shining black triangle, the third antennal segment is yellow with the upper margin rather broadly infuscated. The thoracic vittae are broad, black, and dull because of a covering of grey dust, the scutellum is fuscous with the margin yellow, and though there are the usual dark spots on the pleura they are not uniformly black, the one on the sternopleura being usually reddish-yellow. The legs are yellow, with apices of tarsi infuscated. Length, 2·5-3 mm.

Original locality, Formosa, and represented by one specimen now before me from Como, N.S.W., December, 1928 (H. Petersen).

CHLOROPS STIGMATELLA Becker.

This species has the aristae similarly coloured to those of the preceding one, and the antennae, palpi, thoracic vittae, and legs are almost identical in colour also. But the frontal triangle is brownish-black, glossy, with the posterior margin and a spot on each side in front of the ocellar elevation yellow, the surface smooth except for a shallow central sulcus anterior to the ocelli which extends to the linear anterior projection, the latter reaching anterior margin of frons, and in addition to the sulcus there is a single well-defined marginal impressed line on the entire length of the wide part of the triangle on each side. The scutellum is entirely yellow and the pleura are yellow, with but a faintly indicated reddish mark on the lower margin of mesopleura and a larger one on lower portion of the sternopleura, and a small deep black spot below the prothoracic spiracle. Length, 3 mm.

Originally described from New South Wales and Formosa. I have a number of specimens before me from Mosman, and Sydney, N.S.W., two of them taken on windows, in the months of October and April (Health Dept.).

CHLOROPS PALLIDISETA, n. sp.

♀. A darker species than the preceding one, the general ground colour being brownish-yellow, and distinctly less shining. Head brownish-yellow, the frontal

triangle glossy-black; third antennal segment broadly infuscated above and at apex; occiput with a large black central quadrate mark; palpi yellow; aristae yellow on the swollen basal portion, white beyond. Thoracic dorsum brownish-dusted, with the five black vittae shining, but not highly glossy because of the overlying brown dust, the intervening stripes rather dark brownish-yellow; pleura almost entirely glossy-black, but the type pinned through the side so that the details are not distinguishable; scutellum yellow in centre, black on sides; hairs and bristles dark. Abdomen fuscous, shining but not distinctly marked in the type which is slightly teneral. Legs testaceous yellow, all femora, and the mid and hind tibiae browned in middle, the tarsi brown apically. Wings slightly brownish, veins dark brown. Halteres yellow.

Frons longer than wide, the triangle distinctly separated from the eyes at the vertex, and extending to anterior margin, its surface highly polished, the sides almost straight so that there is no linear anterior production; the four vertical bristles rather well developed for this genus, the ocellars very short and fine; third antennal segment a little longer than its greatest width, the upper apical extremity not evenly rounded; arista thick at base, with rather dense white pubescence; palpi normal. Thorax without abnormal features, the scutellum with two rather long apical and two much shorter preapical bristles. Legs slender, fore tarsi not thickened, hind femora not distinctly thicker than mid pair and without ventral armature. Third and fourth wing-veins divergent at apices, penultimate section of fourth more than twice as long as penultimate section of third and about three-fourths as long as ultimate section of fifth. Length, 3 mm.

Type: Sydney, N.S.W., 9th October, 1921 (Health Dept.). One specimen.

C. ochrostoma Becker has also a pale arista, but it is not known to occur outside New Guinea and is distinguished from the others in this paper which have a similarly coloured arista by the entirely yellow frontal triangle and other characters.

CHLOROPS NUBILIPALPIS, n. sp.

♂, ♀. Very similar to *scutellaris* Becker in general colour and habitus, differing in having the frontal triangle glossy brownish-black, darker in the central anterior sulcus, the thoracic ground colour paler yellow, and the scutellum pale-yellow with only a small black mark on each basal angle. The femora are glossy-black, all tibiae are slightly darkened centrally, the hind pair more distinctly so than the others, and the tarsi are brown apically.

Structurally the species is readily distinguished from *scutellaris* by the presence of a rather broad shallow sulcus which extends from in front of the ocelli to its anterior extremity, causing the triangle to be more nearly straight on its sides than is that of *scutellaris*, in which species there is a rather evident emargination of the sides anteriorly so that the apex is linear. I cannot detect any posteroventral armature of the hind femora in the new species even with the highest power lens available to me, while this armature is quite evident with a lower power in *scutellaris*. The hind femora in *nubilipalpis* are also not as thick as in *scutellaris*. In other respects the two species are almost identical, the dark spots on the pleura being the same in size and arrangement in both even to the humeral and infraspiracular dots. Length, 3 mm.

Type: Lake Margaret, Tasmania, 3rd February, 1923 (A. Tonnoir); one paratype, same date and collector.

CHLOROPS ALBIFRONS Walker.

I have before me several specimens which I refer to this species with a slight doubt. It is one of the intermediate group between this genus and *Chloromerus* Becker, having the hind femora slightly thicker than the mid pair and with one series of microscopic setules and a rudimentary one opposite it for a part of the extent of the apical third. The hind tibia is very slightly curved at the base, and in other respects the species is quite similar to *striatifrons* Becker described in this paper. It differs from that species, and in fact every other one from Australia in both the genera, in having the frontal triangle entirely glossy-yellow and without sulci or striae. Walker states that the antennae and palpi are fulvous, but in the only specimen of those before me in which the antennae are intact the third segment is partly infuscated. The general coloration is very similar to that of *striatifrons*, the thorax having five glossy-black vittae, and the scutellum being yellow. The pleura have usually three black spots in addition to the small one below the prothoracic spiracle, but there may be one or more of them partly rufous or orange. The legs are yellow, with the apical two or three segments of each tarsus generally darkened. Length, 3 mm.

Originally described from Adelaide, and unknown to Becker who retained it in *Chlorops*. The specimens before me are from Como, N.S.W., December, 1928 (H. Petersen).

Because of the rather damaged condition of all five specimens available, I am deferring a definite opinion on the generic status of the species, but it is undoubtedly distinct from any other in both genera now known to me or included in Becker's paper. Of the species definitely recorded from Australia by Becker, there remain but three unknown to me, *sulcata* Becker, *carinata* Becker and *pictipes* Becker, but I have several as yet undescribed species in hand which I hope to be able to include in a future paper on the family along with complete keys to this genus and also to *Oscinosoma* Lioy, to neither of which genera I have yet published keys. Pending the publication of my keys students may consult the paper by Becker on the Indo-Australian Chloropidae in which most of the species of the subjoined catalogue were described.

Catalogue of the Described Australian Chloropidae.

In this catalogue I include all species which are definitely referred to this family up to and including the present paper, so that students of these insects may have a ready reference to the location of the descriptions. I give only the first reference to, or Australian record of, species in all cases, and cite the genotypes, most of which are not Australian.

It may be of interest to note that Tillyard in his "Insects of Australia and New Zealand" estimates the number of species of the family from Australia as 50, a very conservative estimate indeed. There probably are several hundred species in Australia, the present contribution bringing the total to 97.

Family CHLOROPIDAE.

Subfamily OSCINOSOMINAE.

I. Genus PARAHIPPELATES Becker* (1911, p. 109). Genotype, *Oscinis pulchrifrons* de Meijere.

* References to papers in this catalogue are Becker, 1911, *Ann. Mus. Nat. Hungary*, vol. ix; Malloch, 1923-1928, *PROC. LINN. SOC. N.S.W.*, vols. xlvi (1923)-liii (1928); Skuse, 1889, *PROC. LINN. SOC. N.S.W.*, (2), iv, 1889; Thomson, 1869, *Eugen. Resa*, Dipt.

1. *nudiseta* Becker, 1911, p. 113. Sydney, N.S.W.—2. *ornatipennis* Malloch, 1923, p. 620. Victoria.—3. *brunneicosta* Malloch, 1923, p. 620. Queensland.—4. *duplicata* Malloch, 1923, p. 621. Melville Island.—5. *costomaculata* Malloch, 1924, p. 329. N.S.W.—6. *albiseta* Malloch, 1924, p. 330. Queensland.—7. *fuscipes* Malloch, 1924, p. 330. N.S.W.—8. *aequalis* Becker, 1911, p. 111. New Guinea; Malloch, 1924, p. 331. N.S.W.—9. *anomala* Malloch, 1925, p. 96. N.S.W., S.A.—10. *seticauda* Malloch, 1928, p. 302. N.S.W., Vict.—11. *parva* Malloch, 1928, p. 302.—12. *dasypleura* Malloch (subgenus *Terraeregina*), 1928, p. 303. Queensland.
- II. Genus *EPHYDROSCINIS* Malloch, 1924, p. 331. Genotype, *E. australis* Malloch.
13. *australis* Malloch, 1924, p. 331. N.S.W.—14. *raymenti* Curran, Amer. Mus. Novit., No. 422, 1930, p. 1. Vict.
- III. Genus *EUHIPPELATES* Malloch, 1925, p. 96. Genotype, *E. pallidiseta* Malloch.
15. *pallidiseta* Malloch, 1925, p. 96. N.S.W.—var. *pallipes* Malloch, 1925, p. 97. N.S.W.
- IV. Genus *CADREMA* Walker, Proc. Linn. Soc. London, iv, 1860, p. 117. Genotype, *C. lonchopterooides* Walker.
16. *atriseta* Malloch, 1924, p. 355 (*Gaurax*). N.S.W.—17. *bancrofti* Malloch, 1925, p. 97 (*Hippelates*). Queensland.—18. *fergusoni* Malloch, 1927, p. 438 (*Hippelates*). N.S.W.—19. *atricornis* Malloch, 1927, p. 438 (*Hippelates*). N. Queensland.—20. *nigridorsata* Malloch, 1927, p. 439 (*Hippelates*). Tasmania.—21. *unimaculata* Malloch, 1927, p. 439 (*Hippelates*). Tasmania.—22. *abbreviata* Malloch, 1927, p. 440 (*Hippelates*). Tasmania.
- V. Genus *Batrachomyia* Skuse, 1889, p. 175. Genotype, *B. nigritarsis* Skuse.
23. *nigritarsis* Skuse, 1889, p. 175. N.S.W.—24. *quadrilineata* Skuse, 1889, p. 176. N.S.W.—25. *atricornis* Malloch, 1925, p. 336. N.S.W.—26. *flavicornis* Malloch, 1925, p. 336. N.S.W.—27. *major* Malloch, 1927, p. 440. Tasmania.—28. *strigipes* Malloch, 1927, p. 441. Tasmania.
- VI. Genus *THYRIDULA* Becker, 1911, p. 94. Genotype, *T. breviventris* Becker.
29. *atropicata* Malloch, 1924, p. 358. N.S.W.—30. *centralis* Malloch, 1925, p. 396. N.S.W.—31. *rugosa* Malloch, 1926, p. 546; 1927, p. 441 (subgenus *Euthyridula*, as subgenotype). N. Queensland.—32. *brunneifrons* Malloch, 1927, p. 442. Tasmania.
- VII. Genus *TRICIMBA* Lioy, Atti Inst. Venet., ser. 3, vol. 9, 1864, p. 1125. Genotype, *Oscinias cineta* Meigen.
33. *carinata* Malloch, 1924, p. 356. N.S.W.—34. *scutellata* Malloch, 1925, p. 337. N.S.W.—35. *carinifacies* Malloch, 1927, p. 443. Tasmania.—36. *pollinosa* Malloch, 1927, p. 443. N.S.W., W.A.—37. *convexa* Malloch, 1927, p. 444. Tasmania.—38. *similata* Malloch, 1927, p. 444. N.S.W.
- VIII. Genus *SIPHUNCULINA* Rondani, Dipt. Ital. Prod., vol. 1, 1856, p. 128. Genotype, *S. brevinervis* Rondani.
39. *breviseta* Malloch, 1924, p. 358. N.S.W.
- IX. Genus *PLATYINA* Malloch, 1927, p. 436. Genotype, *P. nebulifera* Malloch.
40. *nebulifera* Malloch, 1927, p. 436. Tasmania.
- X. Genus *BENJAMINELLA* Malloch, 1925, p. 336. Genotype, *B. albifacies* Malloch.
41. *albifacies* Malloch, 1925, p. 337. Tasmania, N.S.W.
- XI. Genus *DELTASTOMA* Malloch, 1924, p. 359. Genotype, *D. unipuncta* Malloch.
42. *unipuncta* Malloch, 1924, p. 359. N.S.W.—43. *atricornis* Malloch, present paper.

- XII. Genus CAVICEPS Malloch, 1924, p. 355. Genotype, *C. flavipes* Malloch.
 44. *flavipes* Malloch, 1924, p. 356. N.S.W.
- XIII. Genus SCOLIOPHTHALMUS Becker, *Mitt. Zool. Mus. Berlin*, vol. 2, pt. 3, 1903,
 p. 147. Genotype, *S. trapezoides* Becker. Egypt.
 45. *albibasis* Becker, 1911, p. 115. Queensland.—46. *vicarius* Walker, *List Ins. Brit. Mus.*, Diptera, pt. 4, 1849, p. 1120 (*Chlorops*). Australia.
- XIV. Genus OSCINOSOMA Lioy, *Atti Inst. Veneto*, ser. 3, vol. 9, 1864, p. 1125.
 Genotype, *Chlorops vitripennis* Meigen.
 47. *mesopleuralis* Becker, 1911, p. 150 (*Oscinella*). Queensland.—48. *impura* Becker, 1911, p. 150 (*Oscinella*). N.S.W.—49. *subpilosa* Becker, 1911, p. 150 (*Oscinella*). N.S.W.—50. *similifrons* Becker, 1911, p. 152 (*Oscinella*). N.S.W.—51. *similis* Becker, 1911, p. 153 (*Oscinella*). N.S.W.; var. *apicta* Malloch, present paper. N.S.W.; var. *fuscibasis* Malloch, present paper. N.S.W.—52. *quadristriata* Becker, 1911, p. 154 (*Oscinella*). N.S.W.—53. *tibiella* Becker, 1911, p. 155 (*Oscinella*). N.S.W.—54. *pruinosa* Thomson, 1869, 605, 307 (*Oscinis*). N.S.W.—55. *punctulata* Becker, 1911, p. 158 (*Oscinella*). N.S.W.—56. *selachopina* Thomson, 1869, 606, 306 (*Oscinis*). N.S.W. [*Tricimba?*].—57. *nigroannulata* Malloch, 1925, p. 338 (*Botanobia*). N.S.W.—58. *dilata* Malloch, 1925, p. 339 (*Botanobia*). N.S.W.—59. *tonnoiri* Malloch, present paper. Tasmania.—60. *tasmaniensis* Malloch, present paper. Tasmania.—61. *nigroannulata* Malloch, present paper. Tasmania.—62. *nigroviolacea* Malloch, present paper. N.S.W.—63. *tinctipes* Malloch, present paper. Tasmania.—64. *luteicornis* Malloch, present paper. Tasmania.—65. *luteohirta* Malloch, present paper. Tasmania.—66. *nigrohirta* Malloch, present paper. N.S.W.
- XV. Genus GAURAX Loew, *Berl. Ent. Zeitschr.*, vol. 7, 1863, p. 35. Genotype,
G. festivus Loew.
 67. *apicipunctata* Malloch, 1927, p. 444. N.S.W.

Subfamily CHLOROPINAE.

- XVI. Genus PACHYLOPHUS Loew, *Ofvers. K. Vet. Akad. Forh.*, 1856, p. 225. Genotype, *P. lugens* Loew.
 68. *lutea* Malloch, 1925, p. 95. Queensland.—69. *secundus* Malloch, 1927, p. 429. W.A.—70. *alienus* Malloch, 1927, p. 429. N.S.W.
- XVII. Genus CHLOROMERUS Becker, 1911, p. 40. Genotype, *C. purus* Becker.
 71. *purus* Becker, 1911, p. 40. N.S.W.; var. *varians* Malloch, 1927, p. 433. N.S.W.; var. *maculifera* Malloch, 1927, p. 433. Tasmania.—72. *pallidior* Becker, 1911, Queensland.—73. *nigrifemur* Malloch, 1927, p. 431. Tasmania.—74. *maculifemur* Malloch, 1927, p. 432. Tasmania.—75. *gracilis* Malloch, 1927, p. 432. N.S.W.—76. *trimaculata* Malloch, 1927, p. 433. N.S.W.—77. *striatifrons* Becker, 1911, p. 57 (*Chlorops*). N.S.W.
- XVIII. Genus CHLOROPELLA Malloch, 1925, p. 94. Genotype, *C. bipartita* Malloch.
 78. *bipartita* Malloch, 1925, p. 94. N.S.W.
- XIX. Genus CHLOROPS Meigen, *Illiger's Mag.*, vol. 2, 1803, p. 278, no species; *Syst. Beschr.*, vol. 6, 1830, p. 140. Genotype, *C. laeta* Meigen.
 79. *scutellaris* Becker, 1911, p. 58. N.S.W.—80. *sulcata* Becker, 1911, p. 58. N.S.W.—81. *stigmatella* Becker, 1911, p. 59. N.S.W.; Formosa.—82. *carinata* Becker, 1911, p. 59. N.S.W.—83. *pictipes* Becker, 1911, p. 60. N.S.W.—84. *albifrons* Walker, *List. Ins. Brit. Mus.*, Diptera, pt. 4, 1849, p. 1121. Adelaide. 85. *canaliculata* Becker, 1911, p. 71. Formosa.—86. *grossa* Malloch, present paper. Tasmania.—

87. *pallidiseta* Malloch, present paper. N.S.W.—88. *nubilipalpis* Malloch, present paper. Tasmania.
- XX. Genus DIPLOTOXA Loew, *Berl. Ent. Zeitschr.*, vol. 7, 1863, p. 54. Genotype, *Chlorops versicolor* Loew.
89. *tasmaniensis* Malloch, 1927, p. 434. Tasmania.
- XXI. Genus CHLOROPSINA Becker, 1911, p. 51. Genotype, *C. oculata* Becker.
90. *nigrohalterata* Malloch, 1924.
- XXII. Genus ASSUANIA Becker, *Mitt. Zool. Mus. Berlin*, vol. 2, pt. 3, 1903, p. 149. Genotype, *A. glabra* Becker.
91. *nigroscutellata* Becker, 1911, p. 81. N.S.W.—92. *grossiseta* Becker, 1911, p. 82. N.S.W.—93. *granulosa* Malloch, present paper.
- XXIII. Genus CHLOROPISCA Loew, *Zeitschr. Ent. Breslau*, vol. 15, 1866, p. 79. Genotype, *Chlorops glabra* Meigen.
94. *subnotata* Malloch, 1927, p. 429. N.S.W.—95. *monticola* Malloch, 1927, p. 430. N.S.W.
- XXIV. Genus FORMOSINA Becker, 1911, p. 78. Genotype, *Chloropisca lucens* de Meijere.
96. *australis* Becker, 1911, p. 80. Queensland.
- XXV. Genus PEMPHIGONOTUS Lamb, *Ann. Mag. Nat. Hist.*, ser. 8, vol. 19, 1917, p. 54. Genotype, *P. mirabilis* Lamb.
97. *mirabilis* Lamb, l.c., p. 35. Melville Is.

Family MILICHIIDAE.

The present group has generally been accepted as a subfamily of Agromyzidae, and was so considered by me in a previous paper in this series, but the most recent work on the acalyptate Diptera by Hendel gives the rank of family and I am tentatively accepting this conclusion. I present some data upon one genus.

Genus MILICHIELLA Giglio-Tos.

Becker (*Ann. Mus. Nat. Hungar.*, vol. 5, 1907, p. 507) published a revision of the subfamily Milichiinae and in it he gave synopses of all the species of this and other genera then known to him. In *Milichiella* he included a number of species which he had not seen, the total being 17. No species was recorded from Australia and only two from as close as New Guinea. Of the latter one, *lacteipennis* Loew, has been recorded in this series of papers, the other, *argentea* Fabricius, is not known to me. There are apparently three species of the genus now in my hands, though one of them is represented by a single specimen which lacks the head and I may be in error in placing it in this genus. Its other characters are so closely in agreement with those of the other species that I believe I am correct in my conclusions regarding its generic position. The three may be distinguished as in the key below, but only in the male sex, as the females are unknown to me, except *lacteipennis*. It is extremely probable that the females of all three species lack silvery dust on the dorsum of the abdomen which is characteristic of other species already known from other faunal regions.

Key to the Species (Males).

1. Abdomen entirely black, glossy except for a portion of tergites 3 and 4 (second and third visible); second and fifth tergites each longer than third and fourth combined, fifth tapered apically, the sides rounded over and with long hairs below curve which extend upwards as a loose fringe; legs black; knobs of halteres yellow; squamae whitish *lacteipennis* (Loew)

- Abdomen densely silvery-white-dusted on dorsum; second tergite longer than fifth, the latter slightly narrowed at apex, not longer than third and fourth tergites combined; knobs of halteres black or fuscous 2
2. Legs, including the tarsi, black; all abdominal tergites with brightly shining silvery dust and two series of black setulose hairs centrally at apex, which become more numerous, generally triseriate laterally, the fifth tergite with some scattered hairs on disc, but none centrally in front *nigripes*, n. sp.
- Tarsi yellowish, remainder of legs black; dust on dorsum of abdomen not brightly shining, rather dull, the third and fourth tergites with scattered hairs in about three series which cover almost all of the area, fifth with some hairs on about the central half, which extend to anterior margin of the exposed portion *lacteiventris*, n. sp.

MILICHIELLA LACTEIPENNIS (Loew).

It may be difficult to distinguish the females of the next two species from this, but in *nigripes* the halteres and margins of the squamae are black, and the frontal triangle is more deeply sunken and narrower, while the pale tarsi and dark halteres should serve to separate *lacteiventris*.

MILICHIELLA NIGRIPES, n. sp.

♂. Head and thorax deep-black, interfrontalia slightly shagreened, giving it a rather dull appearance as compared with the glossy triangle, mesonotum without a trace of dusting of any kind. Abdomen densely covered with bright silvery dust except on the rudimentary first tergite, each anterior lateral angle of second, and the apex of fifth. Legs black. Wings hyaline. Squamae and knobs of halteres black.

Frons at vertex about one-third of the head-width, narrowed to anterior margin, each orbit with the upper bristle recurved, the second proclinate, and two or three anterior incurved bristles; interfrontalia slightly shagreened and with a series of minute incurved hairs on each side of central line which converge anteriorly; face as wide as anterior margin of frons, glossy on upper, dull on lower half, the series of bristles on each side rather fine, the uppermost one longest; cheeks practically obliterated. Thoracic dorsum with numerous rather long black hairs, two pairs of postsutural dorsocentrals, and two bristles on each anterior lateral area; sternopleural with two long and several shorter bristles; scutellum with slight evidence of brownish dust, the disc bare, bristles four. Second abdominal tergite longest, longer than fifth, but not longer than third and fourth combined, fifth slightly longer than fourth, the apical margin of each with at least one, usually two, series of hairs centrally and generally at least three series laterally, fifth with the anterior central portion bare. Legs normal, mid femur with the usual rather dense setulose hairs on anteroventral surface apically. First posterior cell distinctly narrowed apically, almost as in *lacteipennis*. Length, 2-2.5 mm.

Type and two male paratypes, one lacking the head, February, 1924 (Health Dept.).

This species is very similar to one occurring in the Philippines, but differs from the latter in having entirely black legs, glossy mesonotum, and more numerous hairs on the apices of the abdominal tergites.

MILICHIELLA LACTEIVENTRIS, n. sp.

♂. Very similar to the preceding species, differing in the duller white of the abdomen, in the pale tarsi, and the slightly brownish dusted mesonotum. The squamae are also paler. In addition to the character of the hairing of the

abdominal tergites it should be noted that the second tergite is distinctly longer than the fifth, and than the third and fourth combined, and the fifth is about as long as the two preceding combined. Length, 2 mm.

Type: Eidsvold, Queensland. No other data.

Family TACHINIDAE.

Tribe RUTILIINI.

Genus RUTILIA Robineau-Desvoidy.

In the paper previously referred to herein under the family Chloropidae, Curran has described three species belonging to this genus, all of which he places close to *formosa* Robineau-Desvoidy. I offer some notes on the species.

RUTILIA PALLENS Curran.

This species possesses an anterior sternopleural, and pubescent aristae. It is undoubtedly referable to the subgenus *Senostoma* Macquart, and is probably the same as *hirticeps* Malloch, though it is impossible to be certain of this without an examination of the type which I have not seen. This is deposited in the American Museum of Natural History, in New York City.

Locality, New South Wales, no other data.

RUTILIA FORMOSINA Curran.

This species evidently belongs to the *formosa* group, but it is impossible to tell from the description if it has been listed by me in any of my papers on the genus, as there is no mention by Curran of the nature of the hind tibial armature and certain other essential characters. I assume that the length given as 4 mm. is an error, possibly for 14 mm.

Locality, Australia, no other data.

RUTILIA CORONA Curran.

Distinguished from the preceding species in Curran's synopsis by the pile of the parafacials being rather "long and coarse and usually mostly black", instead of "short and fine and yellowish in colour".

Locality, New South Wales, three males, no other data. Type in same collection as the other two.
